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NOTES ON SOME SOUTHERN ILLINOIS PLANTS

By H. A. Gleason

During several collecting trips to southern Illinois the writer has been able to make field notes on a number of rare or interesting species. The flora of the extreme southern part of the state is essentially different from that of the central and northern portions, in that the austro-riparian flora finds there its northern limit, and the unglaciated hills and vertical cliffs afford edaphic conditions unlike anything else in Illinois. Consequently, some three hundred species of the Illinois flora are confined to that region.

The only station in Illinois for *Pinus echinata* Mill. is a small area in Union County locally known as the Pine Hills. The soil there is thin and rocky, and underlaid by Silurian limestone. Erosion has cut deep ravines with steep rocky sides and sharp narrow crests. These hills reach a height of four hundred feet above the adjoining bottoms of the Mississippi River, or about seven hundred and fifty feet above sea level. Along the narrow crests of these hills the pines are growing, in company with hickory and scrub oak. Some of the largest specimens are three feet in diameter and eighty feet high. Along the sides of the hill their growth is stunted, and none is found more than a hundred feet from the crest. Cones are produced abundantly, and healthy seedlings are common.

Along the steep rocky hillside below the pines is the only station in Illinois for the pink azalea, *Azalea nudiflora* L. The shrubs are usually from three to six feet high, and are fairly abundant.

Manuals give but two stations for *Phlox Stellaria* Gray—the cliffs of the Kentucky River and southern Illinois. The latter

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might be further limited to Grand Tower, Jackson County, where it was first observed by Professor French many years ago. In May, 1902, I found it blooming there abundantly. A limestone ridge called the Devil's Backbone extends for about a mile along the east bank of the Mississippi. Its eastern slope is forested, but its western, receiving the full effect, both of the afternoon sun and of its reflection in the water, presents a succession of vertical sunburned cliffs, and in their crevices grow the plants of *Phlox Stellaria.* Hemispherical tufts a foot in diameter, of dull green leaves and light blue flowers, grow over the face of the cliff wherever there is a fissure an eighth of an inch across. Longer fissures are marked with rows of the plants and a geologist might observe the dip of the strata by noticing the growth of the *Phlox.* It shows several xerophytic structures, short stiff stems, and narrow coriaceous leaves with inrolled margins. No plant, however, except a pronounced xerophyte, could live on these bare cliffs. Even in May the rocks are so hot that they are uncomfortable to the touch in the afternoon, and in July the heat is still greater. By that time the seeds of the *Phlox* have ripened and all that remains of the plant are the wiry stems and brown leaves.

Growing with the *Phlox* are some other xerophytes such as *Polypodium polypodioides, Cheilanthes Fëei, Opuntia humifusa, Pellaea atropurpurea,* and *Solidago Drummondii.* The last two grow especially in pockets in the rock, and a cavity holding no more than a tablespoonful of soil will support a large plant of *Solidago* or a dozen fronds of *Pellaea.* This species of *Solidago* grows in Illinois only along the bluffs of the Mississippi River, and so far as observed, only on limestone cliffs.

Polypodium polypodioides in southern Illinois is generally xerophytic in nature, and prefers sandstone cliffs. It may grow, however, on damp shaded cliffs in company with *Camptosorus rhizophyllus* and *Asplenium platyneuron.* I have never seen it upon trees in this State.

Heuchera parviflora Bartl. reaches in Illinois its northern limit. Its favorite habitat is under a damp sandstone cliff, so shaded that the sun's rays seldom or never strike it. Here it grows in abundance with *Marchantia* and other Hepaticae, or an occasional

plant of *Camptosorus*. In the large fissures or caves in the rocks plants of the *Heuchera* are found growing farther from the light than any of the other shade-loving forms.

Sedum telephioides Michx., a plant of the southern Appalachian region was found in August, 1902, in Pope County, where it grows in the thin soil at the tops or on ledges of sandstone cliffs. While this was its first collection in the state, it is also interesting as an example of plant distribution. The migration route by which it has reached Illinois is evidently across the hill region of southern Ohio, the Knobs of Indiana, and the Ozark Hills of Illinois. This affords a continuous route along which the plant might find conditions resembling those of the mountains from which it came.

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LOUISE BRISBIN DUNN

BY ADA WATTERSON

In the sudden death of Miss Louise Brisbin Dunn, tutor in botany in Barnard College, which occurred on December 18, the department with which she has been so long identified has suffered a serious loss.

Miss Dunn's connection with Barnard began in 1893 when she entered as a special student in the department of botany which was then under the direction of the late Professor Emily L. Gregory. Becoming interested in the regular college work, Miss Dunn made up that winter the amount of Greek required for entrance and matriculated as a regular student in the fall. She was graduated in the spring of '97 with the highest standing attained by any student in the college up to that time. She was of course among those who were elected to Phi Beta Kappa when a chapter of that organization was established in the college three years later. After her graduation Miss Dunn was appointed assistant in botany in Barnard College, and during that year and the next carried on work in botany, zoölogy and chemistry leading to the Master's degree, which she received in June, 1899. At that time she was also advanced to the rank of tutor, which position she held at the time of her death. In the summers of